



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/759,356	01/16/2004	Smalley E. Richard	11321-P007D1	9912

7590 11/28/2006  
Winstead Sechrest & Minick P.C.  
P.O. Box 50784  
Dallas, TX 75201

EXAMINER

REIFSNYDER, DAVID A

ART UNIT PAPER NUMBER

1723

DATE MAILED: 11/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

8

<b>Office Action Summary</b>	<b>Application No.</b> 10/759,356	<b>Applicant(s)</b> RICHARD ET AL.	
	<b>Examiner</b> David A. Reifsnnyder	<b>Art Unit</b> 1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 August 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 64-178 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 64-178 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Election/Restrictions***

Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claims 64-116, 141-170 and 172-178, drawn to a method and apparatus for forming substantially aligned single-wall carbon nanotubes comprising subjecting a plurality of single-wall carbon nanotubes to an aligning field.

Group II, claims 117-131, drawn to a method for assembly single-wall carbon nanotubes on a substrate comprising subjecting the single-wall carbon nanotubes to an aligning field, contacting said aligned single-wall carbon nanotubes with a substrate and forming a three-dimensional structure of substantially aligned single-wall carbon nanotubes on the substrate.

Group III, claims 132-140, drawn to a method for forming a composite of substantially aligned single-wall carbon nanotubes comprising providing a suspension of single-wall carbon nanotubes in a liquid, subjecting the single-wall carbon nanotubes to an aligning field, and converting the liquid to a solid matrix material thereby forming a composite of substantially aligned single-wall carbon nanotubes and solid matrix material.

Group IV, claim 171, drawn to an apparatus for forming substantially aligned single-wall carbon nanotubes comprising a positive and negative electrode disposed in a tank and a source of magnetic field for aligning said single-wall carbon nanotubes.

The inventions listed as Groups I-IV do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

Art Unit: 1723

Group II includes the special technical feature of contacting single-wall carbon nanotubes with a substrate and forming a three-dimensional structure of substantially aligned single-wall carbon nanotubes on the substrate; however that special technical feature is not shown in Groups I, III and IV.

Group III includes the special technical feature of providing a suspension of single-wall carbon nanotubes in a liquid, and converting the liquid to a solid matrix material thereby forming a composite of substantially aligned single-wall carbon nanotubes and solid matrix material; however that special technical feature is not shown in Groups I, II and IV.

Group IV includes the special technical feature of a positive and negative electrode disposed in a tank; however that special technical feature is not shown in Groups I-III.

**Group I** contains claims directed to more than one species of the generic invention. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

The generic claims of Invention I are claims **64-69 and 72-80**.

The Species of Group I, **excluding** the generic claims, are as follows:

Species	Type of Aligning Field	Corresponding Claim Numbers
1	Magnetic	70 (elect magnetic), 71, 81-98, 141 (elect magnetic), 142-170 and 172-178.
2	Electric	70 (elect electric), 141 (elect electric) and 142-147.
3	Shear	70 (elect shear), 99-116, 141 (elect shear) and 142-147.

If the Applicant elects **Group I, he is required**, in reply to this action, **to elect a single species** to which the claims shall be restricted if no generic claim is finally held to be allowable. The reply must also identify the claims readable on the elected

Art Unit: 1723

species, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered non-responsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

**Group III** contains claims directed to more than one species of the generic invention. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

The generic claims of Group III are claims 132-134 and 136-140.

The Species of Group III, excluding the generic claims, are as follows:

Species	Type of Aligning Field	Corresponding Claim Numbers
1	Magnetic	135 (elect magnetic)
2	Electric	135 (elect electric)
3	Shear	135 (elect shear)

If the Applicant elects **Group III, he is required**, in reply to this action, **to elect a single species** to which the claims shall be restricted if no generic claim is finally held to be allowable. The reply must also identify the claims readable on the elected species, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered non-responsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

The species listed above do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, the species lack the same or corresponding special technical features for the following reasons:

Regarding **Group I**.

The special Technical feature of Group I, Species 1 is that the aligning field is magnetic,. while the special technical feature of Group I, Species 2 is that the aligning field is electric and the special technical feature of Group I, Species 3 is that the aligning field is a shear flow field.

Regarding **Group III**.

The special Technical feature of Group III, Species 1 is that the aligning field is magnetic,. while the special technical feature of Group III, Species 2 is that the aligning field is electric and the special technical feature of Group III, Species 3 is that the aligning field is a shear flow field.

A telephone call was made to Ross Spencer Garsson on November 22, 2006 to request an oral election to the above restriction requirement, but did not result in an election being made.

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention or species may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

Should applicant traverse on the ground that the inventions or species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions or species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C.103(a) of the other invention.


Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David A. Reifsnyder whose telephone number is (571) 272-1145. The examiner can normally be reached on M-F 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda M. Walker can be reached on (571) 272-1151. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
David A Reifsnyder  
Primary Examiner  
Art Unit 1723

DAR